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Mr. Babington has also recently published a Supplement to his 'Flora Bathoniensis,' containing numerous additions to that little work.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

Mr. Waterhouse exhibited a new species of Hare from the collection made for the Society by the late Mr. Douglas, and proposed to characterize it under the name of *Lepus Bachmani*: he thought it probable that the species had been brought from California. It was thus described:

Lepus Bachmani. *Lep. intensè fuscus, pilis fuscescenti-flavo nigroque annulatis; abdomine sordidè albo: pedibus suprà pallidis, subtùs pilis densis sordidè fuscis indutis: caudâ brevi, albâ, suprà nigricante, flavido adspersâ: auribus externè pilis brevissimis cinerescenti-fuscis, internè albidis, ad marginem externum, et ad apicem flavescentibus obsitis: nuchâ pallidè fuscescenti-flavâ.*

"Fur long and soft, of a deep gray colour at the base; each hair annulated near the apex with pale brown, and black at the points; on the belly the hairs are whitish externally; on the chest and fore-part of the neck the hairs are coloured as those of the sides of the body; the visible portion is pale brown, each hair being dusky at the tip; chin and throat gray-white. The hairs of the head coloured like those of the body; an indistinct pale longitudinal dash on the flanks just above the haunches: the anal region white. The general colour of the *tarsus* above is white; the hairs, however, are grayish-white at the base, and then annulated with very pale buff colour (almost white), and pure white at the points; the sides of the *tarsus* are brown; the long hairs which cover the under part of the *tarsus*, as well as that of the fore-feet, deep brown. The fore-feet above very pale

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Dimensions.	in.	lines.
Length	10	0
Tarsus	3	0
Tail and fur	1	3
Ear externally	2	8
Nose to ear.....	2	$5\frac{1}{2}$

Habitat S.W. coast of N. America, probably California.

"This animal may possibly not be adult; but neither in the teeth, so far as can be ascertained from a stuffed specimen, nor in the character of the fur, can I see any reason for believing it young, excepting that it is much under the ordinary size of the species of the genus to which it belongs; and although it may not be adult, it certainly is not a very young animal. Compared with *Lep. palustris*, with which species it was sent over by Mr. Douglas, it presents the following points of distinction. Although the present animal is not above one-third of the size of that species, the ears measure nearly a quarter of an inch more in length: in fact, they are here longer than the head, whereas in *Lep. palustris* they are much shorter. The next most important difference is in the feet,—which instead of having comparatively short and adpressed hairs which do not conceal the claws, are in *Lep. Bachmani* long and woolly, especially on the under part, and not only conceal the claws, but extend upwards of a quarter of an inch beyond their tips. The claws are more slender and pointed, especially those of the fore-feet. Besides these differences there are some others, which perhaps may be considered of minor importance: the fur is much softer and more dense; the longer hairs are extremely delicate, whilst in *Lep. palustris* they are harsh. As regards the colour, *Lep. palustris* has a very distinct rich yellow tint, which is not observed in the present species, the pale annulations of the hairs which produce the yellow tint, being replaced by brownish white or pale brown."

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The bones of the *Apteryx* are not perforated for the admission of air, nor do they exhibit the pure white colour which characterizes the skeleton in other birds; their tough and somewhat coarse texture resembles rather that of the bones of the lizard tribe.

The spinal column was found to consist of 15 cervical and 9 dorsal *vertebræ*, and 22 in the lumbar, sacral, and caudal regions. The third to the sixth, inclusive, of the dorsal *vertebræ*, are slightly anchylosed together by the contiguous edges of their spinous processes; but Mr. Owen supposes that notwithstanding this *anchylosis*, a yielding, elastic movement may still take place between these *vertebræ*.

The cervical *vertebræ* present all the peculiarities of the type of Birds; the inverted bony arch for the protection of the carotid arteries, is first seen developed from the inner side of the inferior transverse processes of the twelfth cervical *vertebra*, but the two sides of the arch are not anchylosed together.

The *sternum* is reduced to its lowest grade of development in the *Apteryx*. In its small size, and in the total absence of a keel, it resembles that of the struthious birds, but differs in the presence of two subcircular perforations, situated on each side of the middle line, in the wide anterior emargination, and in the much greater extent of the two posterior fissures. The anterior margin presents no trace of a manubrial process, as in the Ostrich, the interspace between the articular cavities of the coracoid being, on the contrary, deeply concave.

After concluding the description of the osteology of the *Apteryx*, of which the preceding is an abstract, Prof. Owen proceeded to observe, "that so far as the natural affinities of a bird are elucidated by its skeleton, all the leading modifications of that basis of the organization of the *Apteryx* connect it closely with the struthious group. In the diminutive and keel-less *sternum* it agrees with all the known struthious species, and with these alone. The two posterior emarginations which we observe in the *sternum* of the Ostrich are present in a still greater degree in the *Apteryx*; but the feeble development of the anterior extremities, to the muscles of which the *sternum* is mainly subservient, as a basis of attachment, is the condition of a peculiarly incomplete state of the ossification of that bone of the *Apteryx*; and the two subcircular perforations which intervene between the origins of the pectoral muscle on the one side, and those of a large inferior dermo-cervical muscle on the other, form one of several unique structures in the anatomy of this bird. We have again

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the struthious characters repeated in the atrophy of the bones of the wing, and the absence of the clavicles, as in the Emeu and Rhea*. Like testimony is borne by the expansively developed *iliac* and *sacral* bones, by the broad *ischium* and slender *pubis*, and by the long and narrow form of the *pelvis*: we begin to observe a deviation from the struthious type in the length of the *femur*, and a tendency to the gallinaceous type in the shortness of the *metatarsal* segment; the development of the fourth or inner toe may be regarded as another deviation, but it should be remembered that in the size and position of the latter the *Apteryx* closely corresponds with the extinct struthious Dodo. The claw on the inner toe of the *Apteryx* has been erroneously compared with the spur of certain *Gallinæ*, but it scarcely differs in form from the claws of the anterior toes.

"In the broad ribs (see the Cassowary), in the general freedom of *anchylosis* in the dorsal region of the vertebral column, and the numerous *vertebræ* of the neck, we again meet with *struthious* characters; and should it be objected to the latter particular, that some Palmipeds surpass the Ostrich in the number of cervical *vertebræ*, yet these stand out rather as exceptions in their particular order; while an excess over the average number of cervical *vertebræ* in birds is constant in the *struthious* or *Brevipennate* order. Thus in the Cassowary 19 *vertebræ* precede that which supports a rib connected with the *sternum*, and of these 19 we may fairly reckon 16 as analogous to the cervical *vertebræ* in other birds. In the Rhea there are also 16 *cervical vertebræ*, and not 14, as Cuvier states. In the Ostrich there are 18, in the Emeu 19 cervical *vertebræ*. In the *Apteryx* we should reckon 16 cervical *vertebræ* if we included that which supports the short rudimental but moveable pair of ribs. Of the 22 true grallatorial birds cited in Cuvier's Table of the Number of Vertebræ, only 9 have more than 14 cervical *vertebræ*; while the *Apteryx* with 15 cervical *vertebræ*, considered as a struthious bird, has the fewest of its order. The free bony appendages of the ribs, and the universal absence of air-cells in the skeleton, are conditions in which the *Apteryx* resembles the *Aptenodites*, but here all resemblance ceases: the position in which the *Apteryx* was originally figured† is incompatible with its organization.

"The modifications of the skull of the *Apteryx*, in conformity with the structure of the beak requisite for obtaining its appropriate food,

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"The skin I put before the Society is that of Azara's *Canis jubatus*, and as it and a fellow skin in my possession are the only specimens of the kind in England (indeed I believe there are only two other specimens in Europe, one in Paris, the other in Cadiz), and as it will most probably have been seen but by few of the gentlemen present, I shall be happy to find that its exhibition is acceptable. Azara states that the *Canis jubatus* has 6 incisors in the upper jaw, then on either side of a vacant space follow 2 canines and 6 molar teeth, three of which, however, look more like incisors than molars; the lower jaw is in all respects similar to the upper, except that the interval is wanting between the canine teeth and the incisors, and there is one additional molar tooth; in other respects the form and general character of these animals are those of the Dog: they differ, however, chiefly in being *unsociable* and *nocturnal*. The tail is much *thicker* and *more bushy*, and they never raise or curl it; the *body* and *neck* are *shorter* and covered with longer fur; the *neck* is also *thicker*; the hair too is thicker; the eye is smaller, the face flatter; the *head*

rounder and *more bulky* as far as the front of the eyes, where the thick part diminishes more speedily and terminates in a sharper muzzle, furnished with whiskers; the ear is broader at its origin, and thicker and stiffer, and when they are on the look-out they present the hollow part forwards and approximate their ears much more than Dogs. They do not bark nor howl like Dogs, nor is their voice heard often; in fact they so cry but seldom, and submit to be killed without uttering a sound. Other discrepancies between his two 'Zorros' and Dogs are added, but it is unnecessary to specify them. I perfectly agree with Azara that he has afforded sufficient proofs of the wide difference between the *Canis jubatus* and Dogs (the most striking part of which difference, however, he has omitted to characterize, viz. the long mane), but here my coincidence in opinion ceases, for it is evident that the animal of which the skin lies upon the table has not the slightest approximation to the character of a Fox, which Azara would make it. A question is thus opened, to what genus or subgenus of the second division of *digitigrada* does the animal belong? Unfortunately the skins in my possession do not afford the means of fixing definitively its place in the family, there being neither skull nor teeth, no toes, and no means of determining whether or not an anal pouch existed. Azara's dental characters are applicable to the genus *Canis*, but he has omitted to notice those minute points which might constitute subgeneric differences. One fact mentioned, that the canines of the *only* adult he examined were ten lines long, although they were very much worn, would apply rather to *Hyæna* than to *Canis*. The number of toes is omitted. Buffon calls the *Canis jubatus* the Red Wolf; but, were not its solitary and nocturnal habits and its predilection for certain fruits and vegetables sufficient to separate it, the remarkable mane at once prevents the alliance. Apparently, therefore, being neither fox, dog, nor wolf, it may be permitted us to look to a neighbouring genus, to see whether or not there are more characteristics common to the animal under consideration and species of that genus than we have yet met with.

"While residing with my family at Cadiz during the spring, three beautiful skins were imported from Buenos Ayres; they were quite unknown to the owner and his friends, and learning that I took an interest in natural history, I was asked to examine and give my opinion upon them. The heavy head, the large ears, the bulky body and comparatively slender hind-limbs, the short neck, the shaggy hair, but particularly the singular mane, fixed my attention; and in the absence of primary generic characters, I would have pronounced the

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A specimen of the *Alauda Calandra*, Linn., from Andalusia, was afterwards exhibited by Col. Sykes, accompanied with the following notice:

"I brought two specimens of these delightful singing-birds from Andalusia with me this spring; and on comparing them with the type of the genus, I am satisfied they approximate more closely to the genus *Mirafra* than to that of *Alauda*. The bill is infinitely more robust than that of *Alauda*. The size of the bird is larger, and its *ensemble* rather that of *Mirafra* than *Alauda*, and the internal organization has a close resemblance to the former, in the proportional length of the intestines and the *colon*, in the form of the lobes of the liver, in the spleen, in the size of the gizzard and substance of the digastric muscles, and particularly in the form and position of the *cæca*. Mr. Yarrell very justly remarks, that the bird in departing from the type of Lark approaches to that of *Plectrophanes* of Meyer; but differs from the latter in not having a curved long hind claw, and also in its more robust character; in short, it has a station between the Larks and the Finches; it differs also slightly from *Mirafra* in its hind claws being those of a Lark, while its bill and other external and internal characters are those of *Mirafra*. On the whole, therefore, it appears desirable to divide the genus *Alauda* into subgenera, and constitute the *Londra* a new subgenus, to which the

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"I brought two specimens of these delightful singing-birds from Andalusia with me this spring; and on comparing them with the type of the genus, I am satisfied they approximate more closely to the genus *Mirafra* than to that of *Alauda*. The bill is infinitely more robust than that of *Alauda*. The size of the bird is larger, and its *ensemble* rather that of *Mirafra* than *Alauda*, and the internal organization has a close resemblance to the former, in the proportional length of the intestines and the *colon*, in the form of the lobes of the liver, in the spleen, in the size of the gizzard and substance of the digastric muscles, and particularly in the form and position of the *cæca*. Mr. Yarrell very justly remarks, that the bird in departing from the type of Lark approaches to that of *Plectrophanes* of Meyer; but differs from the latter in not having a curved long hind claw, and also in its more robust character; in short, it has a station between the Larks and the Finches; it differs also slightly from *Mirafra* in its hind claws being those of a Lark, while its bill and other external and internal characters are those of *Mirafra*. On the whole, therefore, it appears desirable to divide the genus *Alauda* into subgenera, and constitute the *Londra* a new subgenus, to which the

name of *Londra* may be given. The Andalusian bird would thus be the *Londra Calandra*, and an undescribed species from China, now in the gardens of the Society, appears to form a second example of this genus. The generic characters of *Londra* are as follow:

LONDRA. Genus novum.

Rostrum crassum; capitis longitudinem æquans; basi altum, subcompressum; maxilla arcuata; tomiis integerrimis.

Nares plumis anticum versus tectæ.

Alæ corpore longiores, acuminatæ; remigibus, primâ sub-abbreviatâ, tertiâ longissimâ, secundâ et quartâ ferè æqualibus; reliquis gradatim brevioribus.

Cauda cuneata.

Pedes robusti; *unguis* hallucis rectus elongatus.

Typus est, *Alauda Calandra*.

"The specific characters of *Londra Calandra* as published are sufficiently accurate.

"The following are the measurements of a male bird; and as I have seen many scores of them, I think I may say they would apply to the generality of individuals of the species.

"Length, from the tip of the bill to the rump, 5 inches; bill, $\frac{13}{20}$; tail, $2\frac{1}{2}$ inches; *tibia*, $1\frac{1}{20}$; *tarsi*, including nail, $1\frac{1}{10}$; hind claw, $\frac{1}{10}$ inch; liver of two lobes, one much longer than the other; gall-bladder fully developed; spleen cylindrical, $\frac{6}{10}$ inch; intestines, $9\frac{3}{10}$ inches; *duodenum* very wide; small intestines narrow; *cæca*, $\frac{1}{10}$, little more than oblong specks; *colon*, $\frac{1}{2}$ inch long; gizzard very small; but digastric muscle, $\frac{3}{20}$ inch thick; *testes* very large, nearly globular; *irides* black. These birds are fed upon canary seed in Andalusia, but in Lisbon they are fed upon wheat; nevertheless they are fond of raw meat, flies, and worms. They are soon accustomed to confinement, and they sing unconcernedly, although surrounded by spectators; their notes, some of which are a kind of double-tongueing in the phrase of flute players, are remarkably rich and full."

Mr. Blyth made some remarks on the plumage and progressive changes of the Crossbills, stating that, contrary to what has generally been asserted, neither the red nor saffron-tinted garb is indicative of any particular age. He had known specimens to acquire a second time the red plumage, and that much brighter than before; and he exhibited to the Meeting two individuals recently shot from a flock in the vicinity of the metropolis, which were exchanging their striated nestling feathers for the saffron-coloured dress commonly described to be never acquired before the second moulting.

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He also exhibited a Linnet killed during the height of the breeding season, when the crown and breast of that species are ordinarily bright crimson, in which those parts were of the same hue as in many Crossbills; and observed that the same variations were noticeable in the genera *Corythraix* and *Erythrospiza*. Mr. Blyth called attention also to the fact, that in the genus *Linota* the females occasionally assumed the red breast, supposed to be peculiar to the other sex, and that they continue to produce eggs when in this livery; a circumstance very apt to escape attention, as most naturalists would at once conclude such specimens to be males without further examination.

October 9, 1838.—Rev. F. W. Hope in the Chair.

The reading of a paper by Richard Owen, Esq., on the Osteology of the *Marsupialia*, was commenced.

Mr. Martin drew the attention of the Meeting to the crania of the Sooty and White-eyelid Monkeys, *Cercopithecus fuliginosus* and *C. Æthiops*, which were placed upon the table, and upon which he proceeded to remark as follows:

"It is now some years since I stated to the late Mr. Bennett that in the skeleton of a Sooty Monkey I had discovered the presence of a distinct fifth tubercle on the last molar of the lower jaw; recently I have observed the same fact in the skull of the Collared or White-eyelid Monkey (*C. Æthiops*), circumstances of some interest, as this tubercle appears to be always absent in the *Cercopitheci*, and also in such as the Malbrouck, Grivet, and Green Monkeys, &c., which have been separated from the *Cercopitheci* under the subgeneric title *Cercocebus*, Geoff., the Sooty and the White-eyelid Monkeys being included; though, as far as we can see, on no feasible grounds, differing from the foregoing species, as they do, in physiognomy and also in style of colouring. However this may be, the Sooty and White-eyelid Monkeys approximate to their supposed congeners in a more remote degree than has hitherto been supposed. Now with regard to the genera *Semnopithecus* and *Macacus*, both of which are from India, and the African genera *Inuus* and *Cynocephalus*, this fifth tubercle is a constant character and accompanied by the presence of laryngeal sacculi; and in another African genus, viz. *Colobus*, a fifth tubercle also exists, but whether accompanied or not by laryngeal sacs is still to be determined. May not this fifth tubercle, it may here be asked, bring the Sooty and White-eyelid Monkeys within the pale of the *Macaci*? and the question will bear considering. Our reply, however, would be in the negative; for as we have ascertained

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Mr. Owen exhibited a preparation of the *ligamentum teres* in the Coypou, which he had received from Mr. Otley of Exeter.

TWEEDSIDE PHYSICAL AND ANTIQUARIAN SOCIETY.

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From Mr. Herman, London.—Magnificent tiger skin. The animal, when alive, must have measured fully 11 feet from tip to tip.

From Mr. Wilkie of Ladythorn.—Three fine specimens of foreign shells (Pearl Nautilus and Leopard Cowries).

It was announced to the meeting that Mr. Selby of Twizel, one of the most distinguished of our native naturalists, had signified his intention of presenting to the Society the appropriate and valuable donation of a collection of Scottish insects.

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A stated Quarterly meeting of this Society, the establishment of which we mentioned in vol. i. p. 159, was held at Kelso on Monday last, Major Watson, Woodside, in the Chair. The donations reported as received since last meeting, and those announced as now on their way from various contributors, were of a description equally interesting and valuable with any that have been noticed at the previous meetings of the Society.

From Mr. Herman, London.—Magnificent tiger skin. The animal, when alive, must have measured fully 11 feet from tip to tip.

From Mr. Wilkie of Ladythorn.—Three fine specimens of foreign shells (Pearl Nautilus and Leopard Cowries).

It was announced to the meeting that Mr. Selby of Twizel, one of the most distinguished of our native naturalists, had signified his intention of presenting to the Society the appropriate and valuable donation of a collection of Scottish insects.

Specimens of native birds have been received from the Rev. Joseph Train; Mr. Gilbert Bruce; Mr. John S. M'Dougal, Coldstream; Mr. Johnston, Todrig, &c. Of these we may mention the following:—

The Shieldrake (*Tadorna Bellonii*), M. and F.
Crested Cormorant (*Phalacrocorax cristatus*), M. and F.
Little Grebe (*Podiceps minor*), M.
Jack Snipe (*Scolopax Gallinula*), M.
Long-tailed Titmouse (*Parus caudatus*), M. and F.
Black-headed Bunting (*Emberiza Schœniculus*), M. and F.
Mountain Finch (*Fringilla Montifringilla*), M. and F.
Common Linnet (*F. cannabina*), M. and F.

Contributions towards the ornithological department of the collection are received with gratitude, and we are glad to perceive that the friends of the Institution do not weary in their exertions.

It is always agreeable for us to dwell upon the continued prosperity of the Institution whose proceedings we are now noticing. We have stated, that even the attempt to establish it was creditable to the district, and that it is doubly creditable that it should have been hitherto constantly supported in so efficient a manner by nearly every grade of the community.

We ought to mention that the prospect of the Society's being able to present the new building to the public, free of debt, is daily improving, though not yet fully realized; but as the Institution continues to find additional friends, in proportion as it shows more sure tokens of permanence and usefulness, we do not doubt that at the period of our next report we shall have it in our power to state that the whole of the necessary funds have been collected.

BOTANICAL SOCIETY OF EDINBURGH.

April 11, 1839.—Prof. Graham, President, in the Chair.

His Majesty Frederick William III. King of Prussia, was elected a Foreign Honorary Member, by unanimous acclamation.

The President read the conclusion of his report on the Progress and State of Botany in Britain during the last twelve months, which we have already had occasion to notice at p. 53 of the present volume.

The Secretary read a communication from Mr. William Gardiner, jun., of Dundee, accompanying a specimen of *Mucor* new to the British Flora, found in the neighbourhood of Dundee in 1836, and supposed by Sir William Hooker to be *Phycomyces splendens* of Fries, or perhaps the *Ulva nitens* of Agardh.

Mr. Brand read a communication from Mr. George Dickie, of Aberdeen, on the Vegetation of Davis' Straits, in which the author noticed various circumstances, and suggested some inquiries of an interesting nature connected with the range and distribution of species in that region.

Mr. Thomas Wood Morrison laid before the Society engravings

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The Society then adjourned till Thursday, the 9th of May, when the summer meetings at the Royal Botanic Garden will be resumed.

MISCELLANEOUS.

ON THE WILD CATTLE OF GREAT BRITAIN.

As an addition to the notices of the wild cattle of Great Britain, for which our Journal is indebted to the contributions of Mr. Hindmarsh, the Earl of Tankerville, and Sir Philip Grey Egerton *, the following passage from Matthew Paris may be of some interest, as showing that herds of these "boves sylvestres †" existed not only in the forests of Caledonia and the north of England, but in the midland districts. In his account of Leofstan, one of the abbots of St. Albans in the time of Edward the Confessor, he says:

"Opaca nemora quæ a limbo *Ciltriæ* usque Londoniam fere, a parte septentrionali ubi præcipue strata regia quæ Watlingestrata dicitur, fecit resecari, salebras explanari, pontes fabricari, et abrupta viarum in planitiem redigi tutiorem. Abundabant enim eo tempore per totam *Ciltriam* nemora spatiosa, densa et copiosa, in quibus habitabant diversæ bestiæ, lupi, apri, tauri sylvestres, et cervi, abundanter."—*Vitæ Sancti Albani Abbatum*, p. 28.

These great forests of the Chiltern district of Buckinghamshire, Herts, &c., were those in which the Saxon chieftains, aided by some of the citizens of London, for a long time held out against the Norman conqueror, under the countenance of Abbot Fretheric; and where, in subsequent times, the citizens maintained their right of hunting,

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